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ABSTRACT

Cooperative and competitive interaction (interpersonal relationship) between pairs of retarded and nonretarded children of ages 6 to 7 and 11 to 12 were assessed in a situation involving a marble pull apparatus in which competitive interaction was nonadaptive in terms of reward attainment. The retarded group was significantly more cooperative than the nonretarded group and the 6 to 7 year retarded group was more cooperative than the 11 to 12 year retarded group. The results were discussed in relation to previous developmental studies of cooperation and competition and placed in the context of cognitive and reinforcement theories of social development. (Author)

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COOPERATIVE AND COMPETITIVE BEHAVIOR OF RETARDED AND NON-RETARDED CHILDREN AT TWO AGES

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ABSTRACT

Cooperative-competitive interaction between pairs of retarded and non-retarded children of ages 6-7 and 11-12 was assessed in a situation in which competitive interaction was nonadaptive in terms of reward attainment. The retarded group was significantly more cooperative than the non-retarded group and the 6-7 year retarded group was more cooperative than the 11-12 year retarded group. The results are discussed in relation to previous developmental studies of cooperation-competition and placed in the context of cognitive and reinforcement theories of social development.

COOPERATIVE AND COMPETITIVE BEHAVIOR OF RETARDED AND NON-RETARDED CHILDREN AT TWO AGES[1]

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It is not particularly surprising when individuals of low intellectual capacity perform less well on a problem solving task than do individuals of a higher intellectual capacity. A negative relationship between intellect and problem solution is much more unusual. It is such a negative relationship, however, that is reported in this paper, and was, in fact, predicted on the basis of previous research.

In several studies (Madsen, 1967; Shapira & Madsen, 1969; Madsen & Shapira, 1970) it was found that children of different subcultural groups differed markedly in their degree of cooperative vs competitive behavior on an experimental task. It was found, for instance, that Mexican village children of age 7-9 were much more cooperative and less competitive than were children in the United States. Subsequent research (Kagan & Madsen, 1970; Madsen, in press) included a developmental assessment of cooperative-competitive behavior in those two groups. The results of these studies were that urban Anglo-American children were increasingly competitive with age and the older Mexican children were significantly more cooperative than the Anglo-American of the same age.

The fact that the Anglo-American children were increasingly competitive with age is of special interest because the only way to maximize reward in the experimental situations was by cooperation in that pursuance of a competitive strategy could only interfere with reward attainment. These results are also interesting in light of Piaget's (1932) theory of moral development in which it is held that with increasing age an

autonomous morality develops by which the child is able to make rational cooperative decisions based on concepts of reciprocity and justice. The fact that nonadaptive competition rather than rational cooperation appeared to develop with age in these studies led us to the present study on the relation of age and intellect to cooperative-competitive behavior. The study was designed to be primarily descriptive, but focused on a dimension of behavior about which moral, educational and societal concerns are often expressed.

METHOD

Subjects: Subjects were selected from two age groups and two levels of intelligence. The retarded subjects were students in public school classes designated for the educationally mentally retarded of a single elementary school in Los Angeles, California. The non-retarded subjects were students in regular classrooms in the same school. All subjects were caucasian. Intelligence test scores were not made available to the experimenters on the basis of school policy. School authorities gave the assurance,however, that all subjects in the retarded group had individual IQ scores of between 50 and 75. Assurance was also given that no children from the regular classrooms who served as subjects were possible candidates for special classroom placement. Although this degree of intellectual description is inadequate for many purposes, it was considered sufficient for the present study in that non-overlapping groups resulted. The non-retarded group included 16 subjects of age 6-7 and 16 subjects of age 11-12. The retarded group included 18 subjects of age 6-7 and 18 subjects of age 11-12. The subgroups were approximately evenly divided by sex.

Apparatus and procedure: The marble pull apparatus (Figure 1) as initially used by Madsen (in press) in a previously mentioned cross-cultural study was used. The marble pull consists of a rectangular table (43 cm high,

Insert Figure 1 about here

15 cm wide, and 62 cm long) with an eyelet screwed into each end. Strings strung through the eyelets connect to a plexiglass marble holder that is initially placed in the center of the table. When the marble holder is pulled to either end of the table, the marble drops into a cup, thus being delivered to one of the two subjects who are seated at each end of the table. A simple tug-of-war situations is precluded by the fact that the marble holder is held together by magnetic inserts. When subjects pull against each other the marble holder breaks apart and the marble rolls into a groove along the edge of the table. The table top declines slightly from the center to the sides for that purpose.

Pairs of children of the same sex, age, and intellectual group were seated in small chairs, one at each end of the table. Subjects were told that they would play a game in which they could get marbles. The experimenter then demonstrated how the marbles would drop into a cup when one or the other string was pulled. Subjects were not allowed to pull their strings until testing began and were not told that the marble holder would break apart. Subjects were shown 10 marbles and told that they would play 10 times and that they could keep the marbles that dropped into their cup. Preceding each trial the experimenter placed a marble in the holder and said "go". If the marble holder broke and the marble rolled into the groove, the marble was removed and the children were informed that neither would receive the marble because it did not drop into a cup.

After the first 10 trials the subjects were alternately instructed to drop their string and allow the other subject to obtain the marble. Ten additional trians then followed in which the procedure was similar to the first 10 trials.

RESULTS AND DISCUSSION

The mean number of marbles obtained by age and intellect is presented in Table 1. Sex was eliminated as a factor for analysis because the means

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Insert Table 1 about here

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in each intellect x age subgroup were nearly identical.

A two factor analysis of variance (intellect x age) of trial 1-10 scores indicates significant differences due to intellect ($p<.001$) and age ($p<.01$). The interaction between intellect and age is also significant ($p<.01$). Comparisons of individual means (Tukey tests) indicate a significantly greater number of cooperative trials by the 6-7 year retarded group than by any of the other three groups, $p<.01$ for each comparison. Mean differences between the 11-12 year retarded group and each of the two non-retarded groups approach, but do not reach the .05 level of significance.

The second 10 trials, after a demonstration of the effectiveness of cooperation turn taking in obtaining marbles, were included in order to obtain some assessment of the ease with which previously competitive pairs could be motivated to switch to a cooperative response style. An analysis of variance of difference scores, based on the difference between tween the number of cooperative trials per subject pair between trials 1-10 and 11-20, indicates that the difference between these trial blocks is significantly greater for the 11-12 year group than for the 5-6 year group ($p<.01$). Inspection of Table 1 reveals that this age difference is largely due to the increased number of cooperative trials during trials 11-20 by the 11-12 year retarded group ($p<.01$). No other change between trial blocks is statistically significant. It should be

noted, however, that the cooperation scores of the retarded 6-7 year group on trials 1-10 were already quite high, making the possibility of a subsequent increase less likely. The fact that the non-retarded groups showed only a slight increase in cooperative responding on trials 11-20 attests to the pervasiveness of the competitive motive for these children.

The extreme competitiveness of the non-retarded groups is consistent with the results of Madsen and Shapira (1970) and Kagan and Madsen (1971) in which different conflict of interest tasks were used, and with Madsen (in press) in which the marble pull apparatus was used. An exception is that in the latter two of the above studies children of age 4-5 were found to be much more cooperative than children of 7-9 years of age. The behavior of the 4-5 year groups was quite similar to that of the 6-7 year retarded group in the present study. This result is consistent with the previously mentioned developmental trend in that the present 6-7 year retarded group is approximately similar to the previously examined 4-5 year groups in mental age.

These results are presented as descriptive rather than as a causal account of cooperative-competitive interaction. The results can, however, be placed in the context of both cognitive and personality oriented theoretical positions. Zigler (1966) has extensively reviewed the literature on the personality structure of the retardate and has hypothesized that retardates are characterized by an outer-directed personality style which is, at least in part, determined by the child's past history of failure and frustration in interpersonal and problem solving situations. The retarded child, therefore, would tend to avoid placing himself in a competitive situation, prefering to seek approval by conforming to adult wishes, or in the present experiment to the apparent wishes of the

experimenter. Zigler maintains that this response style is due not only to cognitive limitations, but also the experiential history of the child. The significant increase in cooperation on trials 11-20 by the 11-12 year retarded group after a demonstration cooperative trial would be consistent with this general view. Subjects were free to talk during the experiment and several retarded subjects expressed concern about what was the right thing to do or about the goodness of taking turns, while the non-retarded subjects more often expressed concern about winning, or pulling the string before the other child.

In the context of Piaget's (1932) view of moral development, the nature of cooperative interaction is dependent on the cognitive maturity of the child. Social interaction between children up to about age six is said to be based on heteronomous morality, a morality of restraint based upon external authority. An autonomous morality is said to develop later as the child becomes able to distinguish between his own motives and perceptions and those of others. Thus role taking and social interaction based on mutual reciprocity and justice become possible. Within this context it is likely that the cooperative interaction of the 6-7 year retarded subjects as well as that of the 4-5 year subjects in the previous studies is based on an externally imposed morality. The highly competitive behavior of the children of increased age and intellect in the present study, however, indicates that the competitive motive may become so strong that the assumed cognitive capacity for reciprocal interaction is overshadowed by a culturally determined, generalized tendency to compete in conflict of interest situations, even if it is not adaptive to do so in a particular situation. That this developmental trend toward increased

competition with age is to some extent, a cultural rather than a universal concomitant of development is indicated by the results of studies previously mentioned.

References

Kagan, S. & Madsen, M. C. Cooperation and competition of Mexican, Mexican-American, and Anglo-American children of two ages under four instructional sets. Developmental Psychology, 1971, in press.

Madsen, M. C. Cooperative and competitive motivation of children in three Mexican subcultures. Psychological Reports, 1967, 20, 1307-1320.

Madsen, M. C. Developmental and cross cultural differences in the cooperative and competitive behavior of young children. Journal of Cross Cultural Psychology, in press.

Madsen, M. C. & Shapira, A. Cooperative and competitive behavior of urban Afro-American, Anglo-American, Mexican-American, and Mexican village children. Developmental Psychology, 1970, 3, 16-20.

Piaget, J. The moral judgement of the child. London: Routledge & Kagan Paul Ltd. New York: Collier Books, 1962 (originally published 1932).

Shapira, A. & Madsen, M. C. Cooperative and competitive behavior of kibbutz and urban children in Israel. Child Development, 1969, 40 609-617.

Zigler, E. Personality structure in the retardate. In N. R. Ellis (Ed.) International review of research in mental retardation, Vol. 1. New York: Academic Press, 1966.

TABLE 1

Mean Number of Cooperative Trials

by age and intellect (sex collapsed)

		Trials	
	Age	1-10	11-20
Non-retarded	6-7	.25	1.5
	11-12	.13	2.75
Retarded	6-7	7.6	8.0
	11-12	2.8	7.4

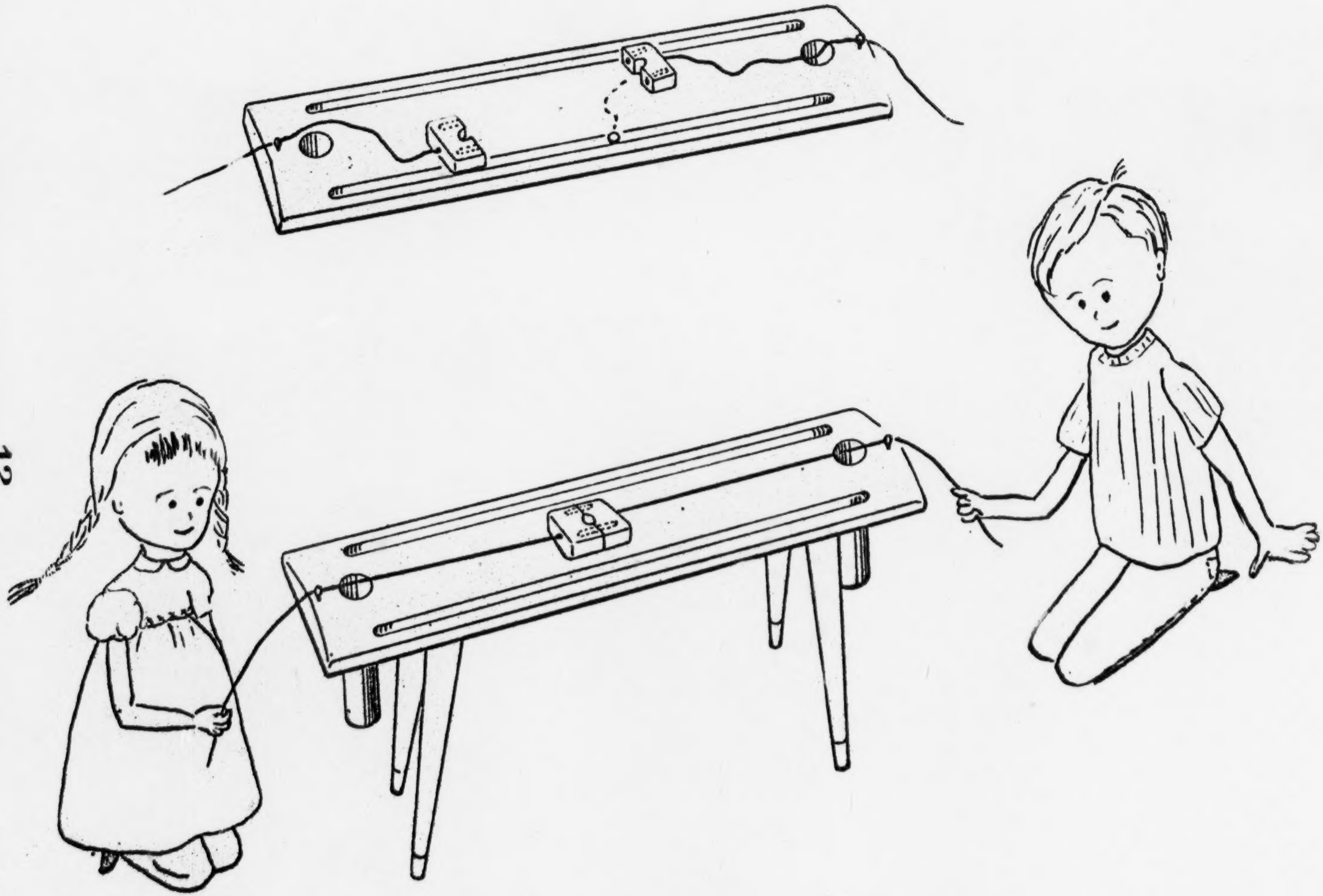

Figure 1. Marble pull apparatus